The Air Line Pilot

November, 1953

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What's ahead for you in American aviation?

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Report on Turbine Transports

The Operational Viewpoint is Vital in the Design and Development of Turbine-powered Transports. Here, ALPA's Engineers discuss some Early-Stage Pilot Opinion and Problems.

By T. G. Linnert and Carl Eck

There is little doubt that the air lines today are heading toward one of the biggest equipment shifts in their history. Both publicly and privately, the industry is thinking jets, talking jets, studying jets. Even the most conservative element recognizes them as the plane of tomorrow.

When is tomorrow? That's harder to pin down. Ten years from now, say some. More than that, or, less than that, say others. The time element will be dictated largely by economics—the solution of problems that presently make jets economically marginal as backbone planes of the air lines.

However, in between the piston engine planes and the jets, an interim plane is possible—the turbine-propeller transport.

Since 1952, the CAA Turbine Transport Team, composed of key CAA specialists, has been devoting its time to a study of the problems to be solved, the standards to be established for the airworthiness and operation of such planes.

The team has held meetings with most of the principal air frame and engine manufacturers, with British Air Registration Board representatives, with equipment manufacturers, with air lines, with military organizations and with the Air Line Pilots Association. Although the team is scheduled to disband in January, their suggestions and recommendations will ultimately be processed in the usual way through the CAA and CAB. Their findings will provide criteria for establishing turbo-jet standards.

On the Cover

The Turboliner, a research transport, was first flown Dec. 29, 1950, at San Diego, Calif. Pilots will recognize the familiar lines of the modified 40-passenger Convair, changed little in appearance except for the engine nacelles. The Turboliner is powered by two 2750-horsepower Allison 501 turbo-prop engines. It was built by Consolidated Vultee for the Allison Division of General Motors to test the latter's turbo-prop engines in a modern commercial-type plane. In the true sense, it cannot be considered a prototype plane, but it is America's first turbine-powered transport.

As representative of the men who will be flying these planes, ALPA has likewise been probing into the design and operating factors that will be encountered with the turbo jets. For several years, ALPA pilot committees and engineers have studied the problem. Their objective: representation of the pilot viewpoint in the conception, design, construction of aircraft and their operating standards and regulations.

Many Problems

No one professes to yet know all the answers to turbine-powered transport operations.

In "ALPA Turbine-Powered Transport Airplane Design and Operating Recommendations" ALPA states:

"More than ever before, researchers are working in special fields to increase the safety and efficiency of present and future aircraft. Today, there is operational know-how so that new airplane designs should, within reason, prevent accidents and dangerous conditions from arising, instead of making corrections and taking remedial steps after the accident or dangerous condition comes about. ALPA believes its recommendations are sound and that better and safer transport planes can be built if their recommendations are followed. However, since it is impossible at this stage of the development of turbine-powered transports to anticipate all the problems that will arise, we feel that active liaison should be maintained between the manufacturer, the CAA and ALPA."

CAA has likewise pursued a line of similar reasoning. In an introduction of their proposed policies for airworthiness certification of turbine-powered

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Ed Modes, Editor

transports, issued earlier this year, they make it clear: "The purpose of this issue is to bring up to date the current thinking of the CAA regarding certification and operational problems of turbine-powered transports and to stimulate interest and comments from the industry. It should be understood that no proposals for amendments to the Civil Air Regulations are contemplated at this time."

ALPA-CAA Meeting Productive

On the basis of this common approach to the overall problem, the joint ALPA-CAA turbine-powered transport meeting held in Chicago on August 11 and 12, 1953, produced considerable background of what to expect in the way of turbo-jet problems and their solutions. At this meeting, CAA-encountered problems were aired, the present trend of CAA thought reviewed, and ALPA recommendations discussed.

It is evident that there is substantial agreement on many items, an honest divergence of opinion on others. It is also evident that there are two distinct categories of problems to be faced: the new ones imposed by increased speeds and higher operating altitudes; the accentuation of the old ones caused by the same factors.

An excellent example of the former is the necessity for having to seriously consider compressibility for the first time in aircraft design. An example of an old problem intensified is that of metal fatigue and air frame strength.

Load, Speed Factors

Compressibility enters the picture, the CAA says, because loads imposed at high mach numbers (ratio of airplane speed to speed of sound) will be a distinct speed-limiting factor. In present-day jet aircraft there is a compressibility buffet as the design Mach number is reached. It is caused by air piling up and bouncing off the leading edge of the wing in what amounts to chunks. The compressibility buffet mimics the familiar stall buffet in symptoms—shuddering and vibration. But the similarity ends there. The compressibility buffet can be distinguished from the stall buffet by the fact that an increase in speed increases the compressibility buffet but would eliminate the stall buffet.

Stall buffet in jets at high altitudes, though it feels rough, may not be structurally serious from a load limit standpoint, the CAA maintains. However, they agree with ALPA and are not discounting its importance in relation to metal fatigue.

About the Article

Before too long, design and operating criteria for turbo-jet transport planes will be crystallizing into regulation form. No final decisions were reached at the recent ALPA-CAA joint meeting. However, the exchange of information provided each group with firmer reasons for establishing standards they feel necessary. Final standards, it should be pointed out, will be subject to change as design and operating experience dictates revision. This article, based on the minutes of the ALPA-CAA meeting and essentially a summary of the opinions and reasoning expressed to date, is published in order to obtain further reader analysis—pilot approval or disapproval of the viewpoints being followed by ALPA's Special Committees. Therefore, if any statements in this article do not concur with what any pilot believes should be ALPA opinion on turbine-powered aircraft, it is requested that their comment be made known to ALPA's Engineering Department. Out of the majority opinion will ultimately come ALPA's conclusive policies on the plane of tomorrow.

Another consideration relating to stepped-up speeds in aerodynamically "clean" planes: dive or drag flaps seem essential to limit speeds in emergencies, thus allowing very high rates of descent and providing a means of slowing down to minimize structural stress and strains in rough air.

Opinion is divided somewhat on the necessity for automatic dive flaps. The question involved here is whether adverse effects of compressibility might be encountered without warning in which cases such automatic flaps would prove an invaluable aid. The CAA views drag increase at high Mach numbers as a built-in safety feature which prevents unwanted high air speeds. It also points to the fact that aircraft wing tips are being fitted with boundary layer fences. These, and other devices near the tips, straighten out the air flow and delay wing-tip stall and pitch up tendencies.

Structural Problems

Even in present-day planes, ALPA ranks structural problems of paramount importance. The very nature of turbine-powered transport will increase the importance of the problem.

At the ALPA-CAA meeting, ALPA pointed out that the fatigue life of some aircraft now in use has shown itself to be much shorter than would be indicated by the design loads specified for static load-absorbing criteria. ALPA proposes: CAR's embodying more stringent regulations in regard to fatigue test requirements.

In this connection it should be pointed out that the industry is beginning to look more and more upon metal fatigue as a vital airworthiness problem. CAA outlines its activities in this field: (1) gathering of gust load data on fatigue in present transport aircraft, both jets and piston driven planes; (2) continued meteorological studies to assess more fully the intensity of vertical gusts at all altitudes.

There is, they say, a great need for gravity force recorder (VGA) information on which to base design criteria for establishing gust load limits.

ALPA and CAA both concur on the necessity for primary controls and systems that will insure, because of structural considerations, positive control of jet transports under all operating conditions.

Flight Control Problems

Not to be overlooked is the problem of the maneuverability that will be required at operational altitudes—obviously higher for jets than conventional planes. The CAA says its analysis of the factors involved in making turns at 40,000 feet has produced the following figures:

TURN	SPEED	ANGLE OF BANK	RADIUS	LOAD FACTOR
2 min.	300 mph	36°	1.59 mi.	1.23 G
4 min.	300 mph	20°	3.18 mi.	1.06 G
2 min.	500 mph	50°	2.65 mi.	1.56 G
4 min.	500 mph	32°	5.30 mi.	1.17 G

From the best determination ALPA has been able to make, most pilots look upon the rate of turn as being more important pilot-wise than the angle of bank. This indicates that the angle of bank should be established on the basis of a strong consideration for the rate of turn. Pilot representatives maintain that a 40° bank is a normal maximum at any altitude and that weather avoidance problems, including cockpit visibility, and weather avoidance equipment, such as radar, must be analyzed before determining the degree of longitudinal control required. CAR's presently dictate a limiting load factor of 1.7 G's, or, a resultant spread between the stall speed and the limiting minimum cruise of 30% above stall speed. In round figures this permits a 50° bank on present aircraft at present operating altitudes. ALPA views the current regulation as a good goal to focus on for jet operation.

Route Requirements

Terrain avoidance problems are multiplied in jet transports. Electronic devices seem to hold the solution. CAA and ALPA both unhesitatingly call airborne radar a "must."

Proper radar equipment designed for terrain avoidance could have eliminated many terrain collision accidents, the CAA is convinced. So is ALPA, long a proponent of airborne radar.

Progress is being made, the CAA points out. But numerous problems in designing suitable radar devices exist, among them development of a bright display tube, weight of equipment, cost, and numerous technical design problems.

Present radar design is concentrating largely on development of weather avoidance electronic equipment. This same equipment, though, has possibility of usefulness in air traffic work —providing there is development of suitable aircraft transponders that will produce a positive radar echo.

CAA and ALPA see eye to eye on VOR and DME equipment. It's necessary, both say, and will be highly useful in jet operation navigational problems.

Inaccuracies in ranges of operation of altimeters are recognized by pilots and CAA alike. They're both concerned. An installation error of 50 feet at sea could be as much as 300 feet at a higher elevation. Differences in altimeter settings, as well as instrument errors, could easily result in two aircraft being at the same altitude.

Pressurization

High altitude operations planned for turbine-powered aircraft will necessitate increased pressurization—at least 8 pounds per square inch, and probably more, the CAA tentatively estimates. This compares with a present operating pressure for pressurized cabins of around 4 pounds per square inch.

Three major ways, the CAA reveals, are under consideration for obtaining air for cabin pressurization: (1) Bleed engine directly for air; (2) Run a cabin supercharger on bleed air; (3) operate the cabin supercharger from a mechanical power takeoff.

ALPA currently feels that pressurization on present aircraft is only so-so; some have good pressurization and air conditioning, others fall below a satisfactory rate of change for air.

ALPA is strongly suspicious that some lubrication oils used in pressurization systems get into the ventilating system. As a result, the Association would like to see tests run to determine the possible degree of contamination with various type lubricating oils.

Design criteria for doors and exits is another area where overall opinion of both ALPA and the CAA jibe. Essentially, their design must consider two factors: emergency evacuation and pressurization. There is no disagreement that, from a structural standpoint of design integrity, the inward opening door is most suitable for pressurization design. Inward opening sliding doors are probably second best from this standpoint. Outward opening doors are considered unsatisfactory because of possible failure of latches under pressure.

Power Plants

Suitable power plants pose a problem of their own. One of them, the CAA says, is to obtain a power plant capable of accelerating from idling rpm to maximum rpm in five seconds. Conversely, rapid deceleration would also be ideal. This is an ambitious goal. Presently, it takes approximately 15 seconds for some turbo-jet engines to accelerate from idling to maximum rpms.

The CAA does not seem concerned that engine reliability will be a serious obstacle in jet aircraft. Its voracious fuel appetite is another thing. One of the biggest power plant problems—but one which is gradually being whipped in some of the new models—is the reduction of fuel consumption in the fuel-hungry planes.

Icing will be a problem, CAA is of the opinion—but icing of the engine air inlets, not wing icing. Large power losses, even engine flame out, can occur because of this. Combative methods under consideration by the CAA are: raising inlet air temperature (bleed), heating of hollow inlet guide vanes, inertia separators, electric heating, use of resistant coating, alcohol injection at compressor inlet, eddy current heat (magnetization), and retractable inlet screens. Icing protection will probably be obtained by any one, or, a combination of these.

Engine location is a subject of debate nationally and internationally. Both ALPA and CAA want engines so located, that in case of turbine disc failure, vulnerability of vital parts to damage would be no greater than propellor damage vulnerability on present-day aircraft. Possibility of complete cabin protection from flying parts of broken turbine discs is viewed as remote. The reason: the impracticability of completely armor-plating the engine, the same problem that exists in propeller-driven aircraft.

It appears to both ALPA and CAA that, while jets naturally will be immune from propeller drag, loss of power in turbo-prop planes may result in exceedingly high windmilling propeller drag. If this proves true, and the drag of windmilling props is high enough to endanger proper control, automatic means of increasing propeller pitch will obviously be called for.

ALPA-CAA Turbo-Jet Roster

NAME	ORGANIZATION	
Harold Hoekstra	CAA	Acting Chairman for George W. Haldeman
R. J. Auburn	CAA	Power Plant
Robert F. Gates	CAA	Air Carrier Operations
Burdell L. Springer	CAA	Aircraft Structure
Robert V. Ford	CAA	Flight Test Engineering
Clarence N. Sayen	ALPA	President
Theo. G. Linnert	ALPA	Engineering & Air Safety
Carl F. Eck	ALPA	Engineering & Air Safety
Vernon A. Peterson	EAL	Physical Standards
Jack A. Durham	AAL	Performance Committee
A. W. Stainback	UAL	Structures Committee
H. G. Portman, Jr.	UAL	Eng. & Airworthiness Advisory Committee
Jack C. Burn	PAA	Emergency Evacuation
Charles H. Ruby	NAL	Structures Committee
Dean L. Phillips	TWA	Terrain Avoidance
Robert A. Stone	UAL	Eng. & Airworthiness Advisory Committee
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Lyle D. Bobzin	TWA	Eng. & Airworthiness Advisory Committee

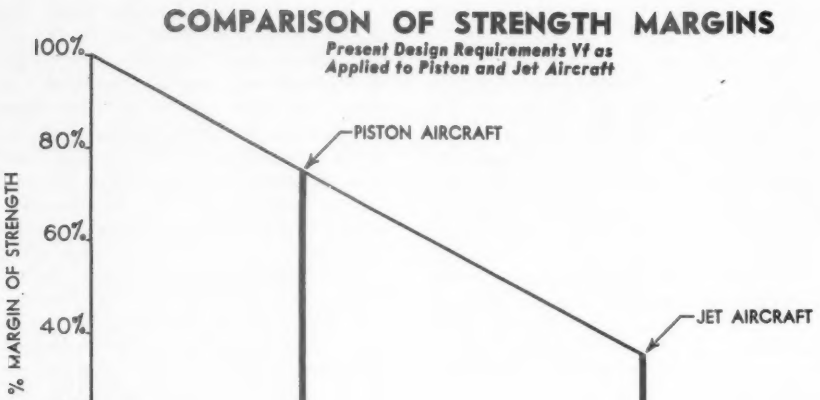

Figure One

Crash Fire Prevention

Crash fire prevention is high on ALPA's list of necessary safety factors. Fuel tanks, as recommended, should be located to provide maximum protection against impact damage in survivable crashes. They should also, it is emphasized, be capable of sustaining the loads resulting from deceleration occurring in these instances.

CAA goes along on this point. There is general agreement that to further reduce the possibility of crash fire, there'll need to be consideration for the utilization of (a) crash switches, both inertia or contact type; (b) means for rapidly cooling all potential ignition points after engine shutdown; (c) engine shutdown by means of fuel shut-off; and (d) electrical disconnect. Such inerting means, either manual or automatic, must include satisfactory protection against inadvertent operation, however.

Temperature Accountability

The proposed CAA Turbine Transport Policy discusses full temperature accountability for above-standard daytime operating conditions. Their studies indicate that the effect of temperature on performance of a single spool turbo-jet engine is approximately one degree of thrust loss for each four degree Fahrenheit temperature rise. On possible solutions, the CAA has these comments:

(1) By use of afterburners it is possible to increase the thrust of a turbo-jet engine about 40%. However, the use of afterburners imposes a drag penalty in cruise, a noise penalty, and, of course, a weight penalty.

(2) Water injection is another method of getting back power loss due to high temperature. There is no drag penalty; slightly more thrust is returned than is taken away by temperature accountability; there is little extra noise. The only penalty is weight—estimated at about 1,000 pounds weight for four-engine aircraft.

(3) It is possible to use a modified afterburner arrangement which returns approximately 20% of the original thrust. This minimizes noise penalty, eliminates drag penalty and reduces the weight penalty.

Power Deterioration

An evaluation of power deterioration has been made by the CAA. They report: Smoke and other contaminating elements collecting on turbine planes of turbo-jet engines, can reduce blade efficiency by 5 to 8 per cent test stand operations have shown. Use of a simple scaled thrust measuring arrangement, is one method of checking power deterioration. There are practically no basic adjustment problems involved in jet engine operations. The fuel control of the main throttle is set at overhaul and needs no adjustment. Fuel type variation, however, can cause some power deterioration. Engine adjustment must conform with the fuel being used. The latest analysis of jet fuels indicates that kerosene will probably become standard.

Landing Distances

ALPA has tentatively agreed with the CAA's proposed policy on computing landing distances, but stresses the need for methods other than wheel braking to provide a suitable margin of safety.

CAA's proposed policy on landing distances is:

"During the landing distance demonstrations the landing approach to the 50 foot height should be made at the speed that would normally be used for ILS approaches with an average glide angle of 2.5°. This speed should not be less than the speed used in demonstrating the balked landing or approach climb (unless it can be demonstrated that the balked landing or approach climb speeds and configurations can be attained within a horizontal distance of 2000 feet and with an altitude loss of not more than 25 feet following the application of power on the available engines). Careful consideration must be given to any proposals regarding reverse thrust and minimum brake capacity to assure adequate safety."

ALPA, however, feels that appraisals of relationship between stall speed and runway length, has, in the past, often not been realistic enough.

In this respect, ALPA, in its Turbine Powered Transport Design Recommendations, has proposed:

"Until considerable practical operating experience has been gained with turbo-jet transports, the stall speeds should be limited to: (1) 90 mph for 6,000 feet landing runway at sea level at maximum gross weight; (2) 97 mph for 7,000 feet landing runway at sea level at maximum gross weight."

Items which will influence the landing distance requirements of jet aircraft are spoilers to reduce lift and put weight load on the wheels and non-locking brakes. Ideal is a reverse thrust device, but this is yet to be developed. Some consideration is being given to employment of drag chutes for auxiliary braking until this latter device is developed. ALPA does not consider these desirable. Neither is the CAA overly enthusiastic about them, although they have not ruled them out entirely.

Design Flap V_{s1}

The importance of requirements for providing flap strength and limiting speeds at which flaps can be used cannot be minimized. In reviewing landing flap design speed problems, CAA states present requirements (contained in 4b.210 (b) (1) provide strength so that flaps could be extended up to a

speed of approximately $1.4V_{s1}$. For example, with a stall speed of 90 miles an hour, flaps could be lowered up to 126 mph. For piston engine aircraft, where takeoff weights rarely exceed 1.2 times the landing weight, a 76% margin of strength is provided by present criteria in the case of an overweight landing. In jets—with takeoff weights as high as 1.6 times landing weight and higher speeds in landings and approaches — the flap strength margin is reduced to about 36 per cent. (See Fig. 1.)

Some opinion prevails that lift flaps for landing should be entirely separate from drag flaps used for speed control.

Based on operating experience, ALPA has recommended that full gross weight should be used as the basis for computing flap strength.

Fuel dumping may be of some assistance in controlling load factors, but is not viewed by ALPA as a sound policy.

As one pilot points out, his air line's policy is not to dump gas below 1500 feet. If the aircraft were that low and close to an airport, it would be doubtful that time would permit unloading fuel. Another pilot mentions that his air line had 479 overweight landings in two and one-half years, but during that time there were only eight cases in which fuel was dumped.

Cross Wind Landings

The CAA states that its information shows little difference between cross wind landing in a jet or reciprocating engine plane. But with additional sweep back of jet aircraft wings, there is admittedly a problem of maintaining low altitude directional control in such landings. Jet engine power is likewise said to be less effective than reciprocating engines for directional control. CAA does not view reduction of cross wind components by baffle-type protected runways as acceptable. It would, they maintain, cut down head wind components as well, thereby eliminating most of the help which can be gained from the wind.

Noise Level

Because of its relationship to pilot fatigue, even though it is in the nature of not being a problem rather than being one, it should be mentioned that the cockpit noise level will be low. CAA logically reasons this way: the noisiest mechanism is behind the wing; the plane is traveling close to the speed of sound, therefore, most noise will by-pass the cockpit. Noise in the rear of the fuselage, however, is a problem slated for research.

Weather Services

With faster planes and higher operating ranges, pilots will be flying more weather, finding new problems at higher altitudes. Weather services, route requirements, navigation, communications and fuel reserves assume increased importance as a result.

Jet streams are an upper altitude hazard. They are high level horizonal winds lying along the boundary between warm and cold air masses. On the warm side of the front, at altitudes in the neighborhood of 30,000 to 45,000 feet, winds of 100 to 130 knots velocity are not uncommon. In jet stream areas, turbulence may be severe if a pilot crosses from the warm side to the cold side or vice-versa. The winds on the cold side of the front may be only 50 knots, while, within a relatively short distance, winds on the warm side may reach more than 130 knots.

The best solution? Avoidance. To accomplish this, the CAA says, Naval, Air Force and Weather Bureau groups are tracking jet streams from the ground by tracking balloons with radar and from aloft by flight operations. PAA pilots are also cooperating extensively in this program.

Better pilot weather information on low visibility approaches is in the offing, CAA predicts. The Sperry-Gyro Co. and Weather Bureau, they reveal, are developing a slant line visibility indicator for use on instrument runways.

As mentioned previously, it is virtually unanimous throughout the industry that airborne radar, in addition to rating a high priority for Air Traffic Control and terrain avoidance, is practically a "must" for weather avoidance before the inauguration of jet transport operations.

Weatherwise, pilots themselves can make valuable contributions. At present, one ALPA pilot says, some pilots are scouting weather conditions by conversing on 126.7 megacycles to give other pilots the benefit of their experience in flying through certain thunderstorm areas.

Navigation and Communication

From a navigation standpoint, the concensus is that VOR and DME will be needed with jets. The CAA implies that LMF facilities are almost useless in high altitude route navigation. CAA seems to think that an ADF radio operating with a recessed antenna presents many problems. Despite this, ALPA is of the opinion that ADF equipment should be kept until satisfactory equipment is developed to replace it.

Communications that are reliable are of utmost importance in jet aircraft, the CAA concurs with ALPA. Some radio reception problems have been solved by installing recessed antennas. Static, due to lightning flashes and corona discharge are expected to be worse than at present, but a compensating factor is that the jet exhaust is one of the best-known static dissipators. ALPA believes that dual

FIRST HAND STUDY: One of the purposes of ALPA-President Sayen's recent European trip was to study at first hand foreign progress in turbine-powered transports. Shown at the Farnborough Air Show are (l. to r.) Gene Borrin, Ward Buckingham, Jack Howe, Sayen, and R. A. Young. The development of tomorrow's planes, Sayen states, will have a strong impact on every individual pilot.

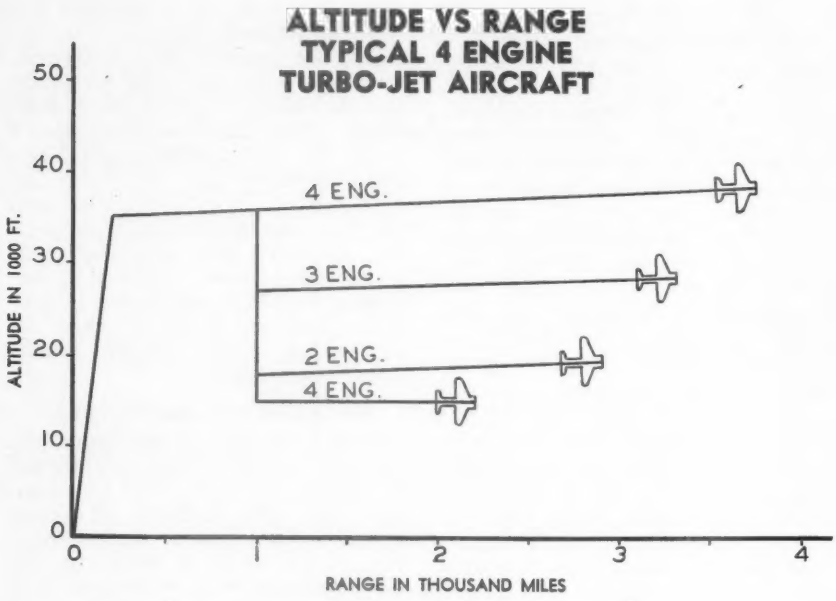

Figure Two

VHF should be required.

Fuel Reserves

ALPA views the CAA's tentative ideas on fuel reserves favorably. It is anticipated that domestic operation fuel reserves will require 45 minute holding at 20,000 feet, descent to the airport, approach, and additional 300-mile cruise with 45-minute holding reserve at the alternate.

Foreign operation fuel reserves may be determined on the basis of requirements necessary to fly from the equa-time point at 15,000 feet, cruise to destination or suitable alternate. This is necessitated by possibility of depressurization en route, unless large amounts of oxygen are carried (Fig. 2).

Fuel gauges, it is agreed, must be improved in order to establish a gross weight, with the fuel load, and determine the amount of fuel available for reserve operations.

Emergency Evacuation

For jet operation, ALPA strongly recommends that greater attention be paid to emergency evacuation—not only in design of the plane, but additionally in passenger education and development of evacuation procedures.

ALPA sees a distinct need for extenal storage of life raft equipment; perhaps somewhat on the order of the Comet which has life rafts stowed in its wings.

Also design-wise, ALPA considers *now* as the time to carefully consider the ratio of exits to number of passengers. Present figures vary from 8 to 17; ALPA recommends: an emergency exit for every other row of passenger seats, or, in a two row, double-seat arrangement, one exit for eight people.

Aisle widths, ALPA contends, should be increased. Present minimum aisle width on some aircraft is 14½ inches; a recommended 20-inch minimum would be more realistic.

ALPA's representatives on emergency evacuation do not view an inward opening door, mentioned previously as favored for pressurization, as appreciably more hazardous from an emergency evacuation standpoint than an outward opening door. Safety considerations of more positive closing latching of inward-opening types, is felt to be of more importance. The real emergency evacuation problem, they say, is not the jamming of doors and exits by passengers; it's primarily getting people moving toward them.

Emergency exit dimensions, these people feel after study, should be larger, however—a minimum width, they maintain, of approximately 36 inches in one direction (for example, a 36-inch diagonal in a rectangular opening) with a maximum distance between floor and exit of 23 inches.

More rapid evacuation could be accomplished, many are convinced, by "walk-out" type exits on each side of the cabin. Time trial evacuation tests have been run on present aircraft to meet a 90-second minimum time. However, in actual experience, three minutes seems to more of a norm.

But one feature that cannot be built into any plane is passenger psychology. Design a plane with every emergency evacuation feature; make it fool proof on the drawing board. Still panicking, uninformed, and, therefore, uncooperative, passengers, can defeat it all.

In the final analysis, ALPA believes, the success of an emergency evacuation depends on the persons involved in it and their pre-conditioning to such an eventuality. On the basis of this, ALPA staunchly recommends that passengers be provided with briefing material showing the provisions available for their protection in case of an emergency.

The Pilots' Role

This article does not encompass all the thinking on turbine-powered and jet aircraft by any means. Nor does it represent conclusions made with any degree of finality. There are many aspects to be considered, many problems to be solved, and a staggering amount of work yet to be done.

The role of the pilots in this gigantic evolution, however, cannot be minimized.

Of its importance, President Sayen says: "The development of turbine-powered and jet transport aircraft will have a strong impact on each individual pilot. It is imperative, therefore, that the pilot or operational viewpoint be represented in the conception, design and development of not only the aircraft and their components but also on the rules and regulations under which they will be built and operated.

He outlines ALPA's future part and ideas generally:

1. Continued coordination, cooperation and free exchange of mutual opinion between the pilots, the CAA and CAB, the carriers, and the manufacturers.

2. A concerted attention to ironing out known mistakes and shortcomings in present planes in the design of future aircraft.

3. A realistic approach embodying a policy of staying within known limitations when in doubt.

4. Finally, wrap the prototype program up with an adequate in-service test program stringent and extensive enough to prove or disprove and evaluate the effectiveness of the preliminary design and operating criteria.

Pilots' Security Problems, Today and Tomorrow

Another Appraisal of the Insurance Problem Which Concludes: "Make Up Your Own Mind—But Be Prudent; Protect Yourself."

By Capt. H. G. Thompson

By the very nature of his profession the air line pilot is faced with unique and serious problem of financial security for both himself and his family. His continued income is predicated on variables that are unparalleled in any other occupation. Present job security is governed by such uncontrollable factors as rigid physical requirements. The air line pilot must constantly jump legal hurdles that would give the best trained legal minds a severe workout. Laws and regulations are occasionally as vague and ambiguous as any ever construed. He must maintain a technical proficiency that is constantly policed by his company, the Federal government, and the flying public.

Future security is even of a more serious nature. It is readily seen that the air line pilot is faced with a relatively early retirement age, due, mainly, to physical restrictions. He is forced to retire at an age when most professional men are at the peak of their earning power and will continue there for years to come.

The ALPA is working constantly to minimize job hazards like the vague legal regulations. It is constantly pressing for clear, simple air safety legislation. The Association's technical departments endeavor to standardize training and air line equipment.

Three-Point ALPA Program

Now the Association has also provided, at the pilots' option, a three point, Mutual Aid, Loss of License, and Group Life Insurance program. This new program, without a doubt, will provide financial security against physical hazards unparalleled in the history of professional men. If the individual air line pilot believes in the necessity of this type of security, by simply participating in the complete program, he will be saving more than his annual ALPA dues. To attempt to purchase this coverage on an open market, would cost many times the package cost, if the coverage could be purchased at all. The Mutual Aid plan is already a going concern and I predict within the very near future, practically every air line pilot in the country will be a member. The loss of license applications are being filled out and returned to the Home Office with a zeal that, I am sure, causes our Accounting Department to blink in amazement. The group life insurance plan will be available shortly at a gross cost of less than any group life insurance has ever been offered to you as air line pilots. Furthermore, it appears probable that an annual dividend on the assumed loss ratio will bring this cost *so low it will be hard to believe.* Also, the insurance will be convertible if the individual pilot should desire to continue coverage after leaving the Association.

Having enjoyed the privilege of serving as a member of your Mutual Aid Association committee, which is working in the best interests of you and your families, and having had the opportunity to study air line pilots' security problems thoroughly for some time, there are a few ideas I have developed that, with your indulgence, I would like to outline briefly.

A Disagreement

First, I cannot sit idly by and ignore the article, "What Price Protection" which appeared in the July issue of the "Air Line Pilot." The author was undoubtedly sincere in the expression of his beliefs, but obviously erroneous from an insurance standpoint. Such misleading information, however well-intended, could impair seriously the interests of the reader and his family. For that reason, I made it a point, upon one of my recent flights to New York City, to call upon an Actuary of one of the largest and most reputable life insurance companies in the world.

This Actuary took the time to study Captain Kehmeier's article, pointing out the inaccuracies. He offered to meet with any reputable Actuary who has earned the coveted diploma "Fellow of the Society of Actuaries" who might be selected by the author of the article, with full confidence that he can disprove the statements that were made.

About the Author

Capt. H. G. Thompson, who has been flying for NWA for 13 years, has a background that has brought him in close contact with problems of pilot financial security.

He has headed the ALPA Council No. 1 Income Tax Committee for six years. He was the air line pilot who obtained a ruling allowing a federal income tax deduction for uniforms.

Capt. Thompson was an active member of the ALPA Mutual Aid Committee and was elected as a member of the Mutual Aid Assn's first Board of Directors. He has been a life insurance underwriter for more than 3 years, studied the subject intensively.

He attended both the University of Minnesota and St. Thomas College in St. Paul. He has served on various ALPA LEC committees for many years and has shown himself to be actively and vitally interested in ALPA's problems and affairs.

"Paid in Full"

ALPA recently received the following letter from pilot James W. Knight, of Council 50, Braniff:

"Gentlemen:

"Please find enclosed check in the amount of $275.00 for 22 years' premium on the Loss of License insurance. I am now 38 years of age and in good health. In twenty-two years I will be sixty years of age which is the retirement age on our airline. Twenty-two years at $12.50 per annum is $275.00 and the enclosed check is good.

"Now that we have this insurance it's going to be more of a temptation (than) ever to spit right in the eye of some of these old cranks that call themselves 'examining physicians,' but in reality I believe that this will relax me so that in all probability I shall keep on passing these 'physicals' to a 'ripe' old age, seventy at least.

"Thanking the Association and those fellows who worked so hard lining this program up for all of us, I remain

Very healthfully yours,

/s/ James W. Knight."

It was hard to say, "sorry, we can only take a year's premium at a time." However, if you're interested in adding to your financial security, here's a suggestion: take advantage of ALPA's Federal Credit Union, either as a repository for presently unworking funds or as part of a long-range planned savings program.

Though there are nineteen major points in the article that are in strong need of correction, I will not bore you with them, as I feel Mr. Robert W. Osler, in the article "I'll Take Guarantees" has already made clear the need for correction.

The Pilots' Plight

Remember this one fact: we air line pilots must be constantly aware of the *single fact* that *our earning power is high but relatively short lived.* And, any Real property we intend to acquire must be paid for while that accelerated earning power is at its peak: whether it is a home, a farm, a small business, retirement annuities, or insurance. As professional air line pilots, trained specialists in our field, we reach retirement age, the possibility of sliding into another field of endeavor with earning potential near our present salary looks quite hopeless.

The old argument for and against Term insurance was referred to in a recent issue of the Kiplinger magazine, *Changing Time,* in which it was said that if you could gather the entire adult population of the United States in one place and yell "Term Insurance," the crowd would instantly resolve itself into three groups. In one corner, would be a small number of people arguing loudly and emphatically that no one with sense buys anything but term. Opposite, would be a small number of people arguing loudly and emphatically that term insurance is not worth bothering with. In between, would be the vast bulk of the insurance-buying public, neither knowing nor caring much about the fine points the others were fighting over, but anxious to get the most value for their insurance dollars.

Term and Permanent

As a life insurance agent. I have sold both term and permanent insurance, or ordinary life as it is commonly called. I know that term insurance has specific uses in a protection program, but that as a substitute for ordinary life, it just doesn't measure up. The Kiplinger article reached the same conclusion. But there are two sides to every question. First, let's look at the principal arguments used by the term insurance advocates.

First, they say, it costs less. And with this statement usually comes the implication that companies overcharge for ordinary life. Critics point to the "outdated" mortality tables used by life insurance companies, but they fail to notice that the mortality tables are used only as a guide, and that it is actual experience each year that determines the cost of insurance—experience reflected in the growing dividend rate as life expectancy improves.

Just as auto insurance rates are going up as accidents multiply, life insurance net costs are going down as the death rate falls.

Further, competition alone keeps life insurance costs low. There are in operation today more than 700 legal reserve life insurance companies, and a company that overcharged would not be in business very long.

Life insurance operations come in for close scrutiny from government in every state—more examination, perhaps, than any other institution. State insurance commissioners supervise the writing of insurance contracts, dictate and inspect investments, set the reserve requirements for the protection of policyholders, and demand an accounting for every penny of income.

Cost Comparisons

Is term insurance really cheaper? While it is true that at any given age the premium required to purchase $1,000 worth of term insurance is lower than for $1,000 of ordinary life, if that $1,000 is carried for very long, most term plans will eventually require a higher outlay than ordinary life. *Changing Times* gave these figures as typical for a buyer age 30. In the first column are his premiums at various intervals for a $10,000 Ordinary life policy. In the next column, costs for the same amount of five-year renewable term.

Year	*Ordinary*	*Term*
1st	$223	$108
5th	187	66
10th	174	79
20th	142	134
30th	130	238
35th	124	367

These figures are based on the assumption that dividends are used to reduce premiums. At age 65, the total paid for the $10,000 ordinary life is $5,416, while the term insurance costs $5,940. While the Ordinary has a cash value of $5,799, the term is worth nothing and cannot be renewed.

The second point the boosters of term insurance make is that with term insurance you achieve the primary objective of protection without the savings feature which, they say, the life insurance companies shouldn't even be concerned with, but which should be left to the individual. It is hard to conceive that anyone interested in savings would be able to accept the fact, from the illustration above, that after paying premiums for 35 years in the amount of almost $6,000, there are no accumulated savings at all in the term insurance policy.

Investing the Difference

Buying term insurance and "saving the difference" between its cost and the cost of ordinary life is something very few men, including air line pilots, can do successfully. In order to save with any degree of success, a man needs constant reminders, some element of compulsion, leaway of a few weeks in making his deposit without loss of interest, expert, full-time management of his invested money, automatic re-deposit of interest. He needs all the helps the life insurance savings plan alone provides.

The very loan feature of permanent insurance so often criticized by term advocates is one of the most important guarantees of the ordinary life insurance policy, and is one not found in any form of term insurance contract. Term insurance makes no provision for emergencies. Most men find it necessary sometime during their lifetime to borrow one or two premiums against the values in their policies. If all the life insurance in force at the beginning of the great depression of the 1930's had been term insurance, the experts estimate that 90 per cent would have gone off the books during the depression years. Instead, life insurance came through the depression with a net loss of less than 10 per cent of insurance in force.

The largest buyers of term insurance are young heads of families who need a large amount of protection especially while their children are growing up. And this is term insurance's greatest social contribution, one which no life insurance company wants to fail to make. That is why your ALPA is making available the cheap group life term insurance, and that is why a young man should, in all probability, retain his national service life insurance group term. Company term plans, if available, are also ordinarily fine sources of term insurance.

Future Unpredictable

But the term insurance stalwarts go overboard in assuming that a man's insurance needs will automatically lessen at middle age. The whole framework of life insurance as an institution is based on the fact that life's hazards cannot be completely and accurately predicted—for pilots or anyone else. It is impossible for a young man to know exactly what his insurance needs will be in 20 years. Many men have a greater need for insurance protection at age 45 or 65 than at age 25. Normally, insurance needs do decline after the children are educated and self-supporting. This is where a part of an individual's insurance program can be tailored with intelligently purchased term insurance; group term where possible. But new and unanticipated needs arise frequently and the devoted father does not shut off his wish to protect his children just because they have become of age.

To the arguments that money saved by buying term can be profitably invested, Bernard Baruch has the best answer I know. He said, "If you are ready to give up everything else—to study the history and background of the market and all the principal stocks as carefully as a medical student studies anatomy—if you can do all that and, in addition, have the cool nerves of a great gambler, the sixth sense of a clairvoyant, and the courage of a lion, you have a ghost of a chance."

Quoting again from the aforementioned Kiplinger magazine article:

"Suppose a man invests his term 'savings' in common stocks, real estate, mutual funds—something that might earn a higher rate of return and hedge against inflation. Here you have a plan that can't be mapped in advance—only in arrears."

The statement that the success of an investment plan can't be mapped in advance—only in arrears—is a highly important one, since most term-plus investment plans held up as models show what "would have happened if." Indeed, none of them can accurately show what will happen in the future.

The quotation from Bernard Baruch illustrates the time and attention that are required to properly plan your own investments. To this must be added consideration of the facts that sudden death may alter these plans, the small amounts available for investment rule out diversity, the estate left may be unmanageable or unmarketable. But the greatest danger to such accumulation lies in the frailties of human nature. Some compulsion, such as the regular reminder of a premium due is almost inevitably required.

Permanent Policy Advantages

Now, what are the distinct advantages of a permanent policy?

Life insurance as an investment shouldn't be underestimated. Money put into a permanent life insurance policy each year over and above the cost of protection buys an investment which carries many special advantages.

Even if another investment with all these special advantages could be found, still permanent cash value life insurance, with the life annuity option, would provide by far the better way today for the average pilot who seeks financial independence for himself if he lives, or for his family, if he dies, for two reasons:

(1) It is possible, during the accumulation period, to create an estate first and then save it; to have an investment plan which is self-completing in the event or death of disability.

(2) Even more important, it is possible to use the annuity principal at retirement to provide a life income two or three times as large as could be received from the interest only on any other type of safe investment. And, insurance companies have a monopoly on offering the life annuity option.

For example if you are age 35 and purchase a $10,000 endowment at 65 policy, assuming all premiums are paid in full and the present dividend scale continues unchanged, at age 65 you will receive total cash of $13,570 or a monthly life income of $81.96.

It would take a principal sum of $39,786 invested at 2½ per cent to pay a monthly interest of $81.96. But by use of the life annuity option it takes only $13,570. By "annuitizing" your savings, you can make one dollar do as much for you as three dollars would, using the traditional interest on principal method—where the principal must be kept intact and where it remains intact at death.

AIR LINE PILOTS ASSOCIATION MUTUAL AID ASSOCIATION
BALANCE SHEET
September 30, 1953
Assets

Cash:		
LaGrange State Bank		$23,958.36
Investments:		
LaGrange Fed. Savings & Loan Assn.	$10,000.00	
U. S. Treasury Certificates	19,023.75	
Total Investments		29,023.75
Accrued interest on U.S. Treasury Certificates		24.73
Total Assets		$53,006.84

Liabilities

Members' Deposits:		
Net liability as of August 31, 1953	$42,106.84	
Net income during September, 1953	10,900.00	
Total Liabilities		$53,006.84

STATISTICAL INFORMATION
September 30, 1953

Number of members	1,104

Air Line Pilots Association Federal Credit Union Financial and Statistical Report Sept. 30, 1953
BALANCE SHEET
Assets

	Sept., 1953
Loans (656)	$399,640.69
Cash	151,960.70
U. S. Bonds	443,638.31
Furniture & Fixtures	2,441.80
Prepaid Expense & Misc.	405.88
Total	$998,087.38

Liabilities

Shares	$962,286.72
Reserve for Bad Loans	13,438.04
Undivided Profits	2,681.04
Profit	19,488.05
Accounts Payable	193.53
Total	$998,087.38

STATEMENT OF INCOME & EXPENSE
Income

	Sept., 1953
Interest on Loans	$3,765.40
Investment Income	831.52
Total	$4,596.92

Expenses

Salaries	$1,082.87
Office Expense	127.59
Educational Exp.	
Loan Insurance	293.46
Depreciation	62.72
Misc.	
Total	$1,566.64
Net Profit	$3,030.28

Statistical Information

	Sept., 1953
Number of Members	2,414
Number of Potential Members	10,865
Loans Made Since Organization (Number)	2,545
Loans Made Since Organization (Amount)	$1,795,164.68

The Tax Relationship

There is still another major advantage! We would do well to think about it. Under our present tax laws, the owner of permanent insurance with the life annuity option enjoys a very favorable tax position. During the accumulation period, *life insurance reserves for the individual policyholder accumulate at compound interest, tax free.* In other words, the annual increases in cash value are tax free. (Tax on every dollar earned on personally invested funds of the air line pilot, take from 24 cents to 40 cents or more *today!*)

In figuring the profit at maturity, the policyholder is permitted to include in his cost figure, the premiums for the protection element. This, in effect, makes the protection part of the premium deductible for income tax purposes. And, if you elect a life annuity option prior to maturity, you don't have to pay a tax even on this profit at maturity.

After retirement, the income from the annuity also enjoys a very favorable position as compared with that from other taxable investments. The annuitant is required to declare each year only an amount equal to three per cent of the consideration for the annuity until the total of the exempt portions equals the cost.

Will You Rent or Buy?

I think the whole term-versus-ordinary controversy can be resolved, if the buyer will only decide whether he wants to rent or buy his insurance. Term is designed to meet a *temporary* need and in its place, gives equal value, dollar for dollar of premium cost, with ordinary life. It is not long-run cheap insurance, but merely low-immediate-outlay insurance . . . not bargain rate insurance, but merely temporary insurance . . . not something owned, but something rented.

It can be compared to renting a home. If a man can't buy a home for his family, he serves them best by renting one. But, on the other hand, a man may pay rent for 20 years and then find himself unhappy, if not downright embittered, when he ponders the fact that for a little more money at the outset, or a little more each month, he would now be holding in his hand a deed to his home instead of a bundle of rent receipts.

Some Impartial Advice

No one knows how long he will live. Because he does not, he must hedge against both contingencies—dying early, or living to old age. As a pilot, I've endeavored to look at this from the pilot's standpoint, taking facts applying to the nature of our profession into consideration. Personally, I feel only a permanent policy form is suitable. Others, it is obvious, disagree. I don't propose to tell anyone what to do or how to do it. But I sincerely feel we must recognize the problem, study the solution and choose wisely. Finally I'd like to leave you with this thought: No one but the individual himself can possibly have the interest or personal know-how to solve his own problems of security for himself and his family. Study your own case, make up your own mind. But by all means take the prudent course of protecting yourself against the insecurity that, as pilots, we particularly face.

Aviation Labor Law---Unique Field

The Grievance Aspects of ALPA's Legal Dept. Are Obvious. But, Beyond That, It Reaches Far Into Every Pilot's Working Life.

By F. Harold Bennett

"Sure," the pilot said, "I know we have a legal department. But only a small part of the membership find use for it. Take me, I've never filed a grievance; maybe I never will. Of course, if I ever do, it'll come in handy."

It is a reasonable assumption that this conversation typifies a fairly general attitude: When pilots hear ALPA Legal Dept., most of them automatically think of grievances and catalogue the department as sort of an emergency cushion marked "For use in case of trouble only."

It is not hard to understand why. Grievances have a personalized and very direct bearing on specific individuals while most of the other work of this department of the Association is, exceptional circumstances aside, more remotely indirect and done with comparatively little fanfare. Yet, its numerous activities are vital to every air line pilot, importantly reaching into a multitude of aspects of his job and his working conditions.

The very nature of the activities of the Air Line Pilots Association constantly require legal opinions and determinations. Additionally, the legal problems encountered are unique to a field of law which is unfamiliar and little understood by the general practitioner. These facts became apparent early in the Association's experience, and, as the increased membership permitted, the Association has enlarged its Legal Department to meet growing and expanding requirements.

The work of the Legal Department can be classified generally: General Counsel with officers and staff on all ALPA affairs; grievances and contract matters; Civil Aeronautics Board cases; Civil Air Regulation violation cases; and miscellaneous.

Grievances and Contract Matters

For employees to have substantial rights under an employment agreement, which can be enforced, is still a relative innovation. In consequence, the employer is reluctant to part with any prerogative which might be obscure in the Employment Agreement, and he often finds it difficult to confine himself to the requirements of an agreement, notwithstanding its clear meaning and intent. It is one thing to negotiate and consummate an employment agreement giving the employee stipulated wages and working conditions; it is quite another thing to get a company to live by the letter and spirit of that agreement.

It is the purpose and function of the grievance machinery of pilots' Employment Agreements to require company compliance with its terms, and it is also the obligation of the employees, individually and collectively, to use the grievance processes to enforce their rights under the Agreement. It is not an uncommon circumstance that an employee will suffer continuous violation of his contractual rights rather than file a grievance. This situation

stems from the erroneous notion that grievances engender a strained employer-employee relationship. Nothing could be further from the truth. A grievance which has substance and is justified will be won. As a natural result, the company will show a greater respect for the contractual rights of the employees; and for the employees, too. It is everywhere conceded that sound grievances are a healthy employee prerogative that result in a virile labor relationship.

The grievance sections of all Air Line Pilots Association contracts may vary in form, but are almost identical in substance. They are not simple, but neither are they so complex that they cannot be understood and applied with a minimum of application. To aid the pilot in processing his grievance, the ALPA Legal Department has published a booklet entitled "A Guide for Processing Grievances," which is available at the Home Office. We urge the member who is contemplating the filing of a grievance to obtain this booklet and familiarize himself with the grievance process.

The Record

The necessity for an efficient, well-grounded Legal Department at the service of the membership is best illustrated by a recitation of work accomplished. In the past two years, the ALPA Legal Department has handled 212 grievance cases, including those processed through the various System Boards with arbitors sitting as fifth and neutral members. The total monetary value of the cases won is not less than $98,619.58. Many of these cases are discharge grievances where the pilot has been restored to his position and employment.

We estimate the total monetary value of the cases won in terms of "not less" than $98,619.58 because it is not possible to state the actual cash value of a restored pilot's position. In three actual discharge cases the pilots involved received pay for time lost in amounts of $5,800, $6,500 and $2,900 respectively; each is now back at work receiving compensation in excess of $1,000 per month, with an expectancy of equal or better earnings for years to come. Who can say what such a "win" is worth?

Due primarily to the give-and-take manner in which Employment Agreements are consummated by collective bargaining, it is not uncommon that a clause in such an agreement may be susceptible to two or more interpretations. In such instances, the Employment Agreement Department, in conjunction with the Legal Department, attempts to clarify the particular clause and supply logical argument for the pilot group. Pilots thus fortified in their discussion with the company are often able to reach favorable understandings regarding the disputed sections without resort to a grievance. A natural result of such action is the saving of funds, time, and a more harmonious employer and employee realtionship.

Some Facts About ALPA's Legal Dept.

The ALPA Home Office Legal Department presently employs three full-time staff attorneys: Department Head is F. Harold Bennett, six years with the Association, twenty years' experience in the general practice of law and ten years specializing in aviation labor law; Maurice H. Schy, six years with the Association, three years in general practice and six years in aviation labor law; and Ralph Harkenrider, four years in general practice, a former Air Force multi-engine pilot, who is in his first year with the Department. In addition, the Association maintains a standby working relationship with selected attorneys in the various regions.

CAB Cases

For the purpose of protecting, encouraging, and regulating activity in the air transport industry, the Congress enacted legislation in the form of the Civil Aeronautics Act. To implement the broad policies of this legislation, a provision was included therein for a tribunal that would administer the Act. This tribunal is known as the Civil Aeronautics Board. Among its functions and powers, the Board grants Certifications of Convenience and Necessity to air carriers, route extensions, and in all other respects, regulates the air line industry.

ALPA is, of course, vitally interested in many of these matters. In the past few years, it has been the policy of the Association to file formal Petitions of Intervention in all Civil Aeronautics Board cases where issues are involved that might in any way effect the interest of ALPA's membership. This has been a duty which falls naturally to the Legal Department.

During the past two years, the Association has been a party in an unusually large number of these CAB cases, and has formally participated in the proceedings, in one degree or another, depending upon how greatly the pilots involved might be affected.

Protection in Mergers

From the Association's participation in these Civil Aeronautics Board cases have come the Employee Protective Conditions, which the Board now imposes regularly in all merger cases. These Employee Protective Conditions in merger cases extend to all employees of both companies. The pilots can be justly proud that their Association was largely responsible for these very considerable labor gains in the air line industry. Examination of these Employee Protective Conditions in merger cases reveals that they are substantial. To mention only a few:

For a period of three (3) years the employees retained in the service of a merged company may not be placed in a worse position with respect to compensation than he occupied immediately prior to the merger, and when the claim arises, the protection is afforded for a period of four (4) years thereafter. Thus, it may be said that the protective period really covers seven (7) years.

During a like period, in the event the employee is required to change his place of residence because of the merger, he is assured living expense; against any loss occasioned in the sale of his home, fair value for the equity in his home being purchased under a contract; and cost in securing the cancellation of his lease.

The employee may, for a like period, be assured 60 per cent of his previous average monthly compensation if he should be furloughed, or he may forego such an allowance and take instead a dismissal allowance in a lump sum, ranging from 6 to 60 months pay, depending upon his length of service.

The Better Way

While it is true that Employee Protective Conditions in merger cases might very well have been the subject of Collective Bargaining, anyone who is familiar with this process will understand that to secure the benefits encompassed in the Civil Aeronautics Board's Protective Conditions over the bargaining table would have required years and years of effort. Moreover it would undoubtedly have required the employees' bargaining away other substantial gains in the process.

In any specific Civil Aeronautics Board merger case, when the Board approves the merger, the Legal Department immediately commences to monitor the integration of the two pilot Seniority Lists under the process developed by the Association. The actual integration is accomplished by the two pilot groups involved. However, the

Legal Department works in closest cooperation, furnishing all possible help and information, and seeks to keep the two groups within the time schedule of 120 days allotted to complete an integrated list. Certainly, pilot cooperation is most largely responsible, but it is interesting to note, though, that since the adoption by the Association of a policy and process for the integration of Seniority Lists in merger cases, which calls for the integration to be accomplished within 120 days from the date the Civil Aeronautics Board approves the merger, with the help of the Legal Department, the task has always been accomplished within the prescribed time.

When necessity dictates, the Legal Department attends Civil Aeronautics Board Safety Investigation Hearings and gives legal representation to the pilot or pilots involved.

Civil Air Regulation Cases

In regulating the Air Line Industry, the Civil Aeronautics Board promulgates rules to govern the conduct of the air lines and the pilots who man the equipment. These rules, the Civil Air Regulations, are, as pilots are aware, policed by the Civil Aeoranutics Administration. If a pilot is presumed to have violated a Regulation, he receives notice from this "police department," usually in the form of a letter requesting his comment upon the happening.

If the Administrator deems the violation to be of sufficient import, he may take action against the pilot in one of two forms: (1) He may request the payment of a fine. (2) He may suggest the suspension or revocation of the pilot's certificate. In the first instance, if the pilot refuses to pay the requested fine, the Administrator brings a suit against him in the Federal District Court, in the district in which the pilot resides. If suspension or revocation is the penalty sought, the Administrator brings a proceeding before the Civil Aeronautics Board. In either instance, the Legal Department is ever ready to give representation to the beleaguered pilot.

Contrary to the thinking of many members, it is not the function of the Legal Department to prejudge the happening and advise the pilot whether he should settle the violation or not. This is an obligation which each pilot must himself accept, and for good reason. No one can guarantee the outcome of a law suit, and if unhappily, a pilot was found guilty after the Department had advised him against settlement, he would certainly be justified in his belief that he had received poor representation. The truth is, that the pilot involved knows better than anyone else the facts involved, and it is nothing less than just and proper that he should be the one to determine whether he will accept a penalty or defend his actions.

However, it is an assigned function of the attorneys of ALPA to provide the pilot with a frank, honest appraisal in an alleged violation case if such is requested, but it is emphasized that the final responsibility of determining the course to pursue is always upon the pilot involved. If the pilot decides to defend, the Legal Department is constantly available to render whatever assistance the situation requires.

Miscellaneous Matters

The duties of the Legal Staff, which may be classified under the heading of miscellaneous matters, consumes a considerable part of their time. The Department receives and answers no less than 4,000 letters annually, covering such a wide variety of legal questions that it would be folly to enumerate them. Many employee complaints which come to the Department are disposed by correspondence and without the necessity of a grievance. In these matters, an incident file is opened in the Department and the matter followed up at regular intervals until a satisfactory solution is accomplished.

The Department maintains a current roster of members of the System Boards of each air line represented, and, in accordance with the Constitu-

UAL Provides Facilities for Pilot Rest

—UAL Photo

A recent issue of THE AIR LINE PILOT pointed out proper pilot rest as an important safety factor. Some air lines provide these facilities; others do not. One line that does is United.

New sleeping quarters for UAL's pilots and flight engineers have been completed in Chicago as part of a system-wide program to improve such facilities for flight personnel.

The accommodations consist of a lounge, showers and 19 noise proofed double rooms. A buzzer system from the dispatch office arouses sleepers individually, without disturbing others. Rooms are air conditioned and temperature controls enable occupants to heat or cool their quarters as desired.

In addition to the Chicago quarters, United's flight crew accommodations at Seattle and Los Angeles also have been modernized. Renovations are in progress at Newark and Washington, D. C. Remodeling of Salt Lake City facilities is scheduled this fall, with similar work at Denver and San Francisco in the planning stage. Improvement of rest areas at intermediate stations also is blueprinted.

Does your line have proper rest facilities?

tion and By-Laws, reminds the President of the Association of the necessity for the required annual change in the pilot membership. Similar rosters are kept for all affiliates.

The System Boards of each air line represented by the Association meet semi-annually to dispose of cases on their respective agenda; one of the legal staff is in attendance at each of these meetings and presents the pilots' cases to the Board. In those cases which are deadlocked the department attends the appointment of the required "neutral" and again presents the case to the Board, with the neutral in attendance.

As soon as an application for the merger of two air lines is filed with the Civil Aeronautics Board, the Department at once seeks the election, on both carriers, of Seniority Representatives as required by ALPA policy and maintains a current roster of all such duly elected Representatives.

One of the more important functions of the Department which is classified among the miscellaneous duties is the defense of legal actions brought against the Association itself. In the past several years, there have been numerous such damage suits asking damages from the Association in the hundreds of thousands of dollars. When such suits are begun in Illinois, the Department defends, when the suits are brought in other states, it is necessary to employ local counsel, but in such instance the Department confers with the local counsel, develops and directs the defense, and otherwise monitors the proceedings to a conclusion.

A Favorable Ratio

Grievances, whether they entail working conditions, the recovery of money, or the recovery of a job, and cases brought before the Civil Aeronautics Board for the suspension or revocation of a pilot's certificate for the purported violation of Civil Air Regulations, are, in all respects, "lawsuits." If carried to their ultimate conclusion, they are heard and determined by "neutrals." No one can guarantee the outcome of a lawsuit and it is a foregone conclusion that the Legal Staff will not always be successful in these lawsuits in behalf of their pilot client. However, the ratio of "wins" to "losses" has been extremely favorable.

These are some of the more important ways in which ALPA serves its members. It is obviously impossible and impractical to delineate all of the activity engaged in by the ALPA Legal Department, but if you want to establish in your own mind whether or not the activities of this department importantly affect you as an air line pilot, a few questions you can ask will provide the answer:

Have you need for advice on your rights and responsibilities as a pilot?

Has your air line ever been involved in a merger, route exchange, or equipment interchange?

Have you ever had occasion to need an interpretation of any provisions in your employment agreement?

Have you ever processed a grievance, or been party to a group grievance?

Have you ever been charged with a violation of the CAR?

Have you ever been discharged or disciplined?

If your answer to any of these question is "yes," there is little doubt you are fully aware of the valued part the Legal Department plays in the affairs of your Association. But regardless of your answer, the constant availability of the ALPA Legal Department to you contributes in no small measure to your job security in an inherently insecure profession.

MEET YOUR VICE-PRESIDENTS

In point of service to the Association, few, if any, can equal and none, most certainly, can exceed the record of W. T. (Slim) Babbitt, ALPA Regional Vice President for Region II.

Captain Babbitt joined Eastern Air Lines in 1935. His service to the Association began that same year. He has been with Eastern ever since, and there has not been a year in which he has not held some ALPA office.

He was chairman of EAL's New York ALPA Council twice; of their Miami Council four times. He has been Master Chairman so often it's hard to keep track of. "At least four times," he says.

Except for the last two years, he has been either Chairman of the EAL Negotiating Committee or a member of the committee every year. Last year he resigned from the EAL System Board of Adjustment after serving on it for seven years.

As Regional Vice President he has put in seven years in that capacity.

Nineteen forty-eight was a peak year in Capt. Babbitt's record of service. He was Regional Vice President, LEC Chairman, Master Chairman, Chairman of Negotiating Committee, and member of the System Board of Adjustment —all at one time.

Capt. Babbitt was born in Denver, Colorado, August 25, 1910. He learned to fly in 1928. In January, 1954, he will celebrate 18 years with EAL. He is married and has two children; a boy, age 7, a girl, age 13.

Unfortunately Capt. Babbitt has announced he will not be a candidate for reelection as a Regional Vice President. ALPA will, indeed, sorely miss the services of a man of his caliber, talent, and all-weather loyalty.

Statement required by the Act of August 24, 1912, as amended by the Acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233) showing the ownership, management, and circulation

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1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Air Line Pilots Association, Intl., 55th St. and Cicero Ave.; Editor, Ed Modes, 55th St. and Cicero Ave.; Managing editor, None; Business manager, None.

2. The owner is The Air Line Pilots Association, 55th St. and Cicero Ave.; Clarence N. Sayen, President; Jerome E. Wood, First Vice President; F. A. Spencer, Secretary; Lyle R. Hincks, Treasurer, all of 55th St. and Cicero Ave.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

(Signed) EDWARD C. MODES, Editor

Sworn to and subscribed before me this 17th day of September, 1953.

(Seal) CHAS. ROHLES

(My commission expires Nov. 15, 1955.)

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